ONTARIO MINISTRY OF ENVIRONMENT
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Port Rowan

THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

of the

VILLAGE OF PORT ROWAN

COUNTY OF NORFOLK

June, 1965

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Report on a water pollution survey of the village of Port Rowan, county of Norfolk.

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R E P O R T

on a

WATER POLLUTION SURVEY

of the

VILLAGE OF PORT ROWAN

County of Norfolk

June 24, 1965

Division of Sanitary Engineering

REPORT

ONTARIO WATER RESOURCES COMMISSION

A water pollution survey was conducted in the Village of Port Rowan on June 24, 1965, to ascertain whether conditions exist which may contribute to the pollution of Long Point Bay which is part of Lake Erie.

INTRODUCTION

The survey is in keeping with the functions of the Ontario Water Resources Commission in its programme to control pollution of all surface and ground waters in the province. The procedure followed is to sample all known or suspected sources of pollution, and to take steps to abate these where there is or may be an impairment of the quality of the water due to the discharge. In this way, an effort is being made to ensure a water quality satisfactory for domestic water supplies, fish and wildlife, recreation, industry, agriculture, navigation and all reparian activities.

GENERAL

The Village of Port Rowan, with a population of 781 and a taxable assessment of $799,000 (1965 Municipal Directory Province of Ontario), is located in the Township of South Walsingham, County of Norfolk. The village is situated along the shoreline of the innermost part of Long Point Bay.

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WATER USES

Municipal Water System

The Village of Port Rowan obtains its water from the bay. The plant intake crib is located approximately 500 feet from the shoreline in a shallow area known as the Inner Bay. The water in this area is affected by the currents in the bay and becomes quite turbulent at certain periods.

Recreational Uses

Long Point Bay is well known for its fishing areas and extensive boating facilities. There are docking facilities in Port Rowan which are used extensively by boats which cater to fishing parties.

Although there is no beach area along the shoreline, numerous persons swim off the end of the docks.

WATER POLLUTION

Sanitary Waste Disposal

The village does not have a municipal water pollution control system. Information obtained at the time of the survey indicated that sanitary wastes are discharged to septic tanks and field tile beds or to the storm sewer system which services the village.

Commercial outlets suspected of discharging to the storm sewers lack sufficient land for field tile beds. Private residents also are suspected of discharging to the storm sewers. Since the

formation of the Norfolk County Health Unit in 1957, new homes or businesses have been required to install private sewage disposal systems under the unit's supervision.

Proposed Water Pollution Control

The council of the municipality reportedly is aware of the pollution problem. The matter has been discussed, but no action has been taken towards programming for a municipal treatment system. It is reportedly felt that the village could not bear the cost until the water supply system debenture is retired.

Refuse Disposal

The refuse collected in the village is disposed of at a site located in the Township of South Walsingham. No pollution problem has resulted from this site to date.

Industrial Waste Disposal

The Innes Foods Company Limited, a tomato canning factory, is the only industry in the village. The wastewater from the plant is collected in a retention lagoon. The wastes are held in the lagoon during the winter months and discharged to a stream, which empties into the Inner Bay, during the spring runoff. As the location of the stream mouth is near the water works intake, care must be taken when emptying the lagoon. There was no wastewater in the lagoon at the time of the survey. The plant generally operates from the middle of August to early October. Routine inspections are made of this waste disposal operation during the canning period.

Sampling Programme

To ascertain the extent of polluted wastes being discharged to the bay, samples were collected from the outlets of storm sewers serving the village. Three storm sewer outlets were located which had discharges. The location of the outlets were as follows:

the outlet just south-east of the intersection of College and Front streets;

the outlet south-east of the intersection of Ellis and Front streets; and,

the outlet south-east of the intersection of Erie and Wolven streets.

The College Street storm sewer drains the western section of the village which is mostly residential. The community centre hall, a bowling alley and the public school are also in this section of the village.

The Ellis Street storm sewer drains the largest section of the village including most of the business section.

The Wolven Street storm sewer drains the eastern section of the village. It is possible that the commercial establishments on the east side of the Main Street discharge to this sewer, as well as some private homes.

EXPLANATION AND SIGNIFICANCE OF LABORATORY ANALYSES

Bacteriological Examination

The Membrane Filter Technique is used to obtain a direct enumeration of coliform organisms. These organisms are normal inhabitants of the intestines of man and other warm-blooded animals.

They are always present in large numbers in sewage and are generally minimal in other water pollutants.

The results of the examinations are reported as "M.F. Coliforms per 100 ML".

The Commission's objective for a storm sewer discharge is a coliform density of not greater than 2,400 organisms per 100 ML.

Sanitary Chemical Analyses

Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand is reported in parts per million (ppm), and is an indication of the amount of oxygen required for the stabilization of decomposable organic matter in the water. The completion of the laboratory test requires five days, under the controlled incubation temperature of 20°C.

The Commission's objective for a storm sewer discharge is an upper limit of 15 ppm.

Solids

The value for total solids, expressed in parts per million (ppm), is the sum of the values for the suspended and the dissolved matter in the water. The concentration of suspended solids is generally the most significant of the solids analyses in regard to sanitary quality of water.

The effects of suspended solids in water are reflected in difficulties associated with water purification, deposition in streams, and injury to the habitat of fish.

The Commission's objective for water being discharged from a storm sewer is an upper limit of 15 ppm.

Discussion of Sample Results

The samples collected during the survey were submitted to the OWRC laboratory for bacteriological examinations and chemical analyses. The results of the analyses are appended to this report.

The results of the chemical and bacteriological analyses of all of the samples collected were greatly in excess of the Commission's maximum objectives of 15 ppm BOD, 15 ppm suspended solids and 2,400 coliform organisms per 100 ML.

The high BOD and coliform count in the samples generally indicate the presence of untreated or inadequately treated sewage. As coliform organisms are normal inhabitants of the intestines of man, it is possible for water-borne disease organisms to be present in the water discharging from the storm sewers.

SUMMARY

A water pollution survey of the Village of Port Rowan was conducted on June 24, 1965.

Samples were collected for chemical analyses and bacteriological examinations from the storm sewers serving the village. The results of the analyses indicate that grossly contaminated wastes are being discharged to the bay from the storm sewers.

CONCLUSION

The survey indicates that there is need for a municipal

sewage collection and treatment system to service the Village of Port Rowan. Private sewage disposal systems are not considered to be a satisfactory alternative due to the lack of land available for tile beds in the business section of the village and the low porosity of the clay soil.

RECOMMENDATION

The Village of Port Rowan should proceed with planning for the construction of municipal water pollution control facilities.

All of which is respectfully submitted,

District Engineer C.E. McIntyre
C.E. McIntyre, P.Eng.,

Approved by _____
J.R. Barr, Assistant Director.

/elb

Prepared by: R.G. Quance,
Engineer's Assistant.

All analyses except pH reported in ppm unless otherwise indicated.

VILLAGE OF PORT ROWAN

STORM DRAINS

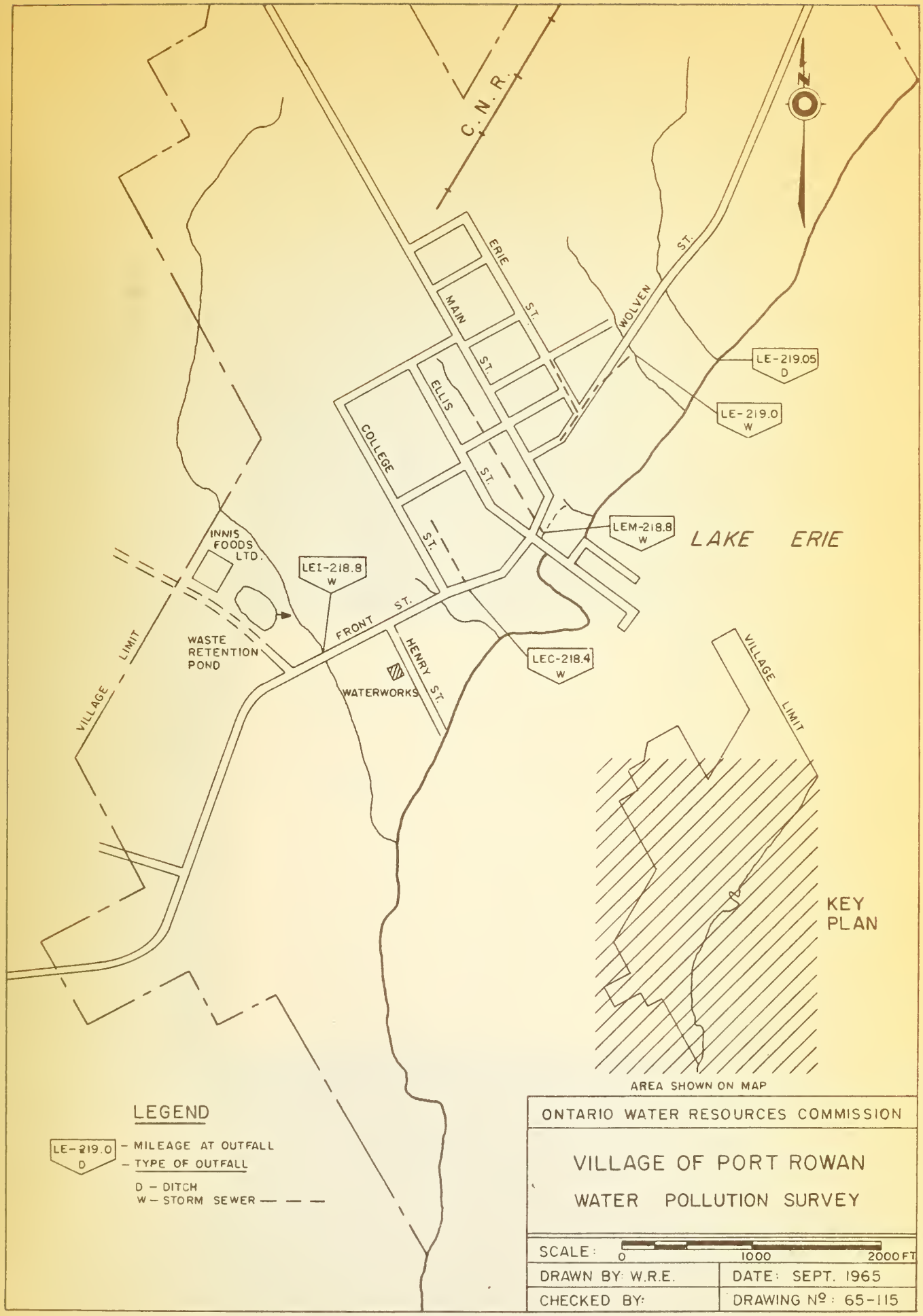
June 24, 1965

Lab. No.	5-Day B.O.D.	Solids			Bacteriological Examination	
		Total	Susp.	Diss.	Bacti. Lab. No.	Coliforms per 100 ML Membrane Filter
7505	42	710	150	560	S-11818	19,000,000
7506	52	1,658	318	1,340	S-11819	2,900,000
7507	90	810	75	735	S-11820	9,400,000

7505 & S-11818 - LEC - 218.4 W Drain East of College Street

7506 & S-11819 - LEM - 218.8 W Drain Outfall at Front and Ellis Streets

7507 & S-11820 - LE - 219.0 D Ditch Drain to Bay East of Erie Street.


C.N.R.
N
ERIE ST.
MAIN ST.
WOLVEN ST.
ELLIS ST.
COLLEGE ST.
ST.
LE-219.05 D
LE-219.0 W
LEM-218.8 W
LAKE ERIE
INNIS FOODS LTD.
LEI-218.8 W
FRONT ST.
WASTE RETENTION POND
VILLAGE LIMIT
HENRY ST.
WATERWORKS
LEC-218.4 W
VILLAGE LIMIT
KEY PLAN
AREA SHOWN ON MAP
LEGEND
LE-219.0 D - MILEAGE AT OUTFALL
- TYPE OF OUTFALL
D - DITCH
W - STORM SEWER
ONTARIO WATER RESOURCES COMMISSION
VILLAGE OF PORT ROWAN
WATER POLLUTION SURVEY
SCALE: 0 1000 2000 FT
DRAWN BY: W.R.E.
DATE: SEPT. 1965
CHECKED BY:
DRAWING Nº: 65-115

DEC - 7 1979